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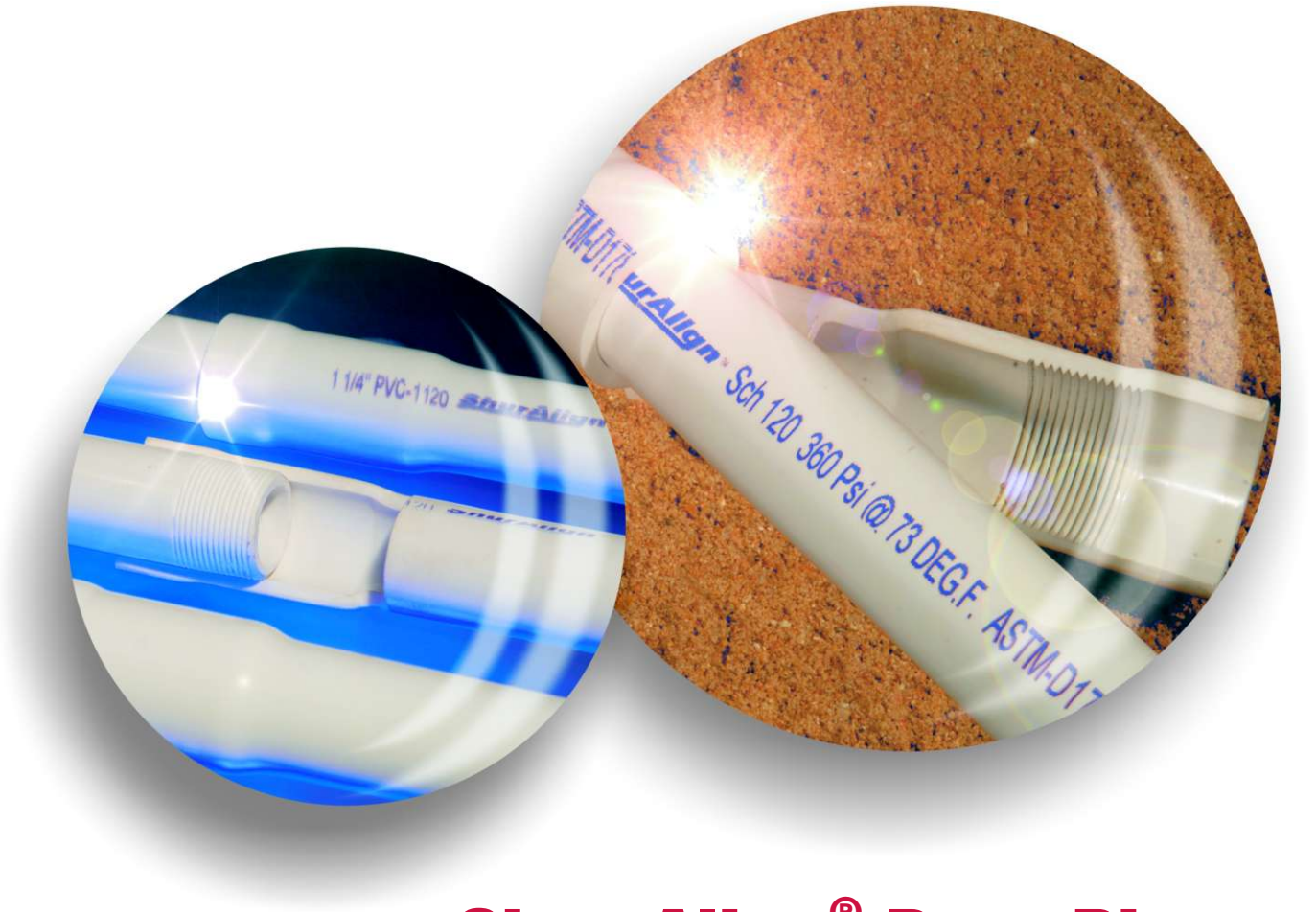


# Shur-Align® Drop Pipe Products Join Johnson Screens® Family

## Patented design helps you quickly and safely install your next submersible pump.

We at *Johnson* Screens know good ideas when we see them. That's why we acquired Modern Products and its unique *Shur-Align* products. We know that our 100-plus years of manufacturing and quality-control experience can make this engineered product a quality leader.

*Shur-Align* drop pipe, for installing submersible pumps, provides a quick and easy installation. No coupling required. Just one thread makeup versus the two required with standard couplings.

The time you save on installation and the promise of clear, safe drinking water more than make up for the slightly higher initial cost of this product. And the quality you expect from *Johnson Screens* will be there.

Find out more. Make your next connection at 1-800-356-4PVC (4782), or visit us at www.johnsonscreens.com/shuralign.

Johnson screens®

ShurAlign

# Installing submersible pumps just got easier—and faster.

## We at *Johnson Screens* know good ideas when we see them. Like the new Shur-Align® design.

The patented *Shur-Align* joint is the most innovative yet simplistic design for PVC pipe assembly to come along in over 25 years:

- **No couplings**
- **Simple alignment and engagement**
- **Beveled shoulder**
- **Quick makeup**
- **Watertight seal**

The entire joint—not just the coupling—is formed from Schedule 120 PVC for maximum strength and durability, making installation of submersible pumps quicker and simpler.

| Nominal Pipe Size (in.) | OD (in.) | Minimum Wall (in.) | Approx. Weight (lbs./ft.) | Pressure Rating (psi) | Maximum Depth (ft) vs. Discharge Pressure (psi) | | | | Pump Maximum HP | Flow Maximum GPM | Skid Quantity (ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 30 psi | 40 psi | 50 psi | 60 psi | | | |
| 1 | 1.315 | 0.200 | 0.45 | 360 | 680 | 660 | 639 | 618 | 1.5 | 10 | 3,300 |
| 1-1/4 | 1.660 | 0.215 | 0.63 | 300 | 575 | 554 | 533 | 512 | 2.0 | 18 | 2,080 |
| 1-1/2 | 1.900 | 0.225 | 0.75 | 270 | 519 | 497 | 476 | 454 | 5.0 | 25 | 1,800 |
| 2 | 2.375 | 0.250 | 1.03 | 240 | 462 | 440 | 418 | 396 | 7.5 | 43 | 2,100 |
| 3 | 3.500 | 0.350 | 2.18 | 220 | 425 | 402 | 380 | 358 | 12.5 | 96 | 1,040 |
| 4 | 4.500 | 0.437 | 3.52 | 220 | 428 | 405 | 383 | 360 | 20.0 | 160 | 680 |

Our PVC materials are listed by NSF International and comply to NSF Standard 61, safe for use in potable water applications. ASTM Standard D1784, standard specification for rigid PVC compounds, uses a cell classification system to call out minimum physical property requirements (base resin, minimum impact strength, tensile strength modulus of elasticity, heat deflection temperature under load, and flammability when tested per applicable ASTM standards) of compounds that are used in the production of PVC pipe and fittings. Rigid PVC compound used for manufacture of pipe has a Cell Classification of 12454 per ASTM D1784 and is also known as Type I Grade I PVC, or PVC 1120.

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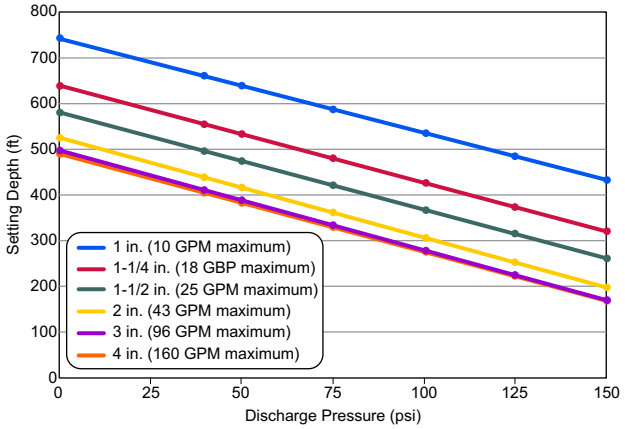
**Friction Head Loss* (ft water/100 ft of tubing)**

| Flow (GPM) | 1-in. Pipe | | 1 1/4-in. Pipe | | 1 1/2-in. Pipe | | 2-in. Pipe | |
|---|---|---|---|---|---|---|---|---|
| | Sch 80 | Sch 120 | Sch 80 | Sch 120 | Sch 80 | Sch 120 | Sch 80 | Sch 120 |
| 5 | 2.4 | 3.0 | 0.6 | 0.7 | 0.3 | 0.3 | 0.1 | 0.1 |
| 7 | 4.5 | 5.6 | 1.1 | 1.3 | 0.5 | 0.6 | 0.1 | 0.2 |
| 10 | 8.7 | 10.8 | 2.1 | 2.6 | 1.0 | 1.1 | 0.3 | 0.3 |
| 15 | 18.3 | 22.8 | 4.5 | 5.4 | 2.1 | 2.4 | 0.6 | 0.7 |
| 20 | 31.3 | 38.9 | 7.7 | 9.2 | 3.5 | 4.1 | 1.0 | 1.2 |
| 25 | 47.3 | 58.8 | 11.6 | 13.9 | 5.3 | 6.3 | 1.5 | 1.8 |
| 30 | 66.2 | 82.4 | 16.2 | 19.5 | 7.4 | 8.8 | 2.1 | 2.5 |
| 35 | 88.1 | 109.6 | 21.6 | 26.0 | 9.9 | 11.7 | 2.8 | 3.3 |
| 40 | 112.8 | 140.4 | 27.6 | 33.3 | 12.7 | 14.9 | 3.6 | 4.3 |
| 45 | 140.3 | 174.6 | 34.4 | 41.4 | 15.8 | 18.6 | 4.5 | 5.3 |
| 50 | 170.6 | 212.2 | 41.8 | 50.3 | 19.2 | 22.6 | 5.5 | 6.5 |
| 55 | 203.5 | 253.2 | 49.8 | 60.0 | 22.9 | 27.0 | 6.6 | 7.7 |
| 60 | 239.1 | 297.4 | 58.5 | 70.5 | 26.8 | 31.7 | 7.7 | 9.1 |

*Hazen-Williams Equation

**Maximum Setting Depth versus Discharge Pressure**
**Schedule 120 Threaded PVC Drop Pipe**




## Best Practice

Keep head loss in pump column pipe to between 5 and 8 ft per 100 ft of pipe.

Use the table above to select the diameter of Shur-Align® drop pipe for your application.

Torque arrestors are recommended in all submersible pump installations.

### PVC Pipe Behavior at Different Temperatures*

PVC pipe exhibits decreasing pressure rating and stiffness with increasing temperature. As with dimensions, the pressure ratings and published pipe stiffness figures for PVC pipe are listed at an operating temperature of 73°F. To determine the pressure ratings and stiffness of PVC pipe at higher temperatures, multiply the pressure rating or pressure class and the stiffness/deflection by the pipe's de-rating factors at that temperature. An example of a table of PVC pipe de-rating factors is shown below. Consult the manufacturer of your pipe for specific data. The typical upper limit for continuous use of PVC pipe is 140°F.

| Temperature (F°) | 60.0 | 70.0 | 73.4 | 80.0 | 90.0 | 100.0 | 110.0 | 120.0 | 130.0 |
|---|---|---|---|---|---|---|---|---|---|
| Temperature (C°) | 16.0 | 21.0 | 23.0 | 27.0 | 32.0 | 38.0 | 43.0 | 49.0 | 54.0 |
| Conversion Factor | 1.15 | 1.04 | 1.00 | 0.95 | 0.90 | 0.75 | 0.65 | 0.60 | 0.50 |

As an example, using the table above, a PVC pipe rated at 450 psi at 73°F, used at 100°F, would have a pressure rating of

450 psi x 0.75 = 337 psi

When applying the factor to maximum depth setting, the discharge pressure should also be adjusted by the same factor.

*Source: Plastic Pipe and Fittings Association*

Teflon is a registered trademark of DuPont.

# Shur-Align® Drop Pipe

## Joint Assembly

- Remove thread protectors, and apply a good-quality non-petroleum pipe paste sealant, approved for PVC, to the threads.
- Assemble and hand-tighten the joint. If necessary, lift the column assembly so that pipe wrenches can grip above the male and just below the female bell to avoid unnecessary stress on the bell thread (same for molded couplings).
- Tighten joints 1 to 2 turns beyond finger tight. **Do not overtighten!**

Note: Ingredients in some pipe dopes and pastes can cause stress cracking. Only apply dopes or pastes designed for PVC. Never use tape and paste on the same joint.

## Check Valves

When installing check valves, ensure that the male thread length (on the valve) is sufficient for full engagement—before the valve body touches the *Shur-Align* female bell. Using a valve with a thread that is too short may result in a leaking joint. Several standard valve brands are available for use with *Shur-Align* drop pipe. Spring-load check valves are recommended to reduce hydraulic shock. Typically the pump has a built-in check valve, and additional check valves are recommended for installations exceeding 200 ft.

## Torque Arrestors

Torque arrestors are recommended in all submersible pump installations. Startup torque causes twisting, which can damage cable and cause the pump column to unscrew. Torque becomes more pronounced as motor horsepower increases. Arrestors should be installed on the first section of drop pipe, just above the pump.

## *Want to learn more?*

Call 1-800-356-4PVC (4782), or visit us at www.johnsonscreens.com.



 Brochure **4925.02**